Possibility of employing ....

$$\vec{E}(P, t) = \sum_m \vec{E}_m(P, t) = \sum_m E_m'(P, t) e^{i\varphi'_m(P, t)}$$

where the sum extends over all the partial fields $\bar{E}_m(P, t)$, which can be regarded as having arrived at the receiver along various trajectories; the field $\bar{E}(P, t)$ is therefore a result of multi-ray propagation. A two-antenna interferometer, shown in Fig. 1, is used as the receiver; it consists of: 1 - two antennae; 2 - feeder system and 3 - a square-detector. The voltage at the point C of the receiving system can be expressed by:

$$\vec{E}_c(\vec{r}, t) = \sum_m G_{1m}(t) E_m'(P_1, t) e^{i\varphi_m(P_1, t)} + \sum_m G_{2m}(t) E_m'(P_2, t) e^{i\varphi_m(P_2, t)}$$

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4

Possibility of employing ....

where G_{1m} and G_{2m} are the gain coefficients of the two antennae,

$\varphi_m(P, t) = \varphi'_m(P, t) + \varphi_{mp}$, where φ'_m represents the mean value of the phase in the antenna aperture,

φ_{mp} is the fixed phase-shift during transmission of the signal from point P to point C of the feeder system.

The mathematical expectation $U_o(\bar{r})$ of the amplitude $U(r, t)$ of the output signal of the square-detector (see Fig. 1) is found analytically and this expression is employed to determine the conditions during propagation of ultrashort waves over near-ground routes extending over tens of kilometres. Under the assumption that the fluctuations are small two cases (important in practice) are investigated: 1) the field at the receiver has only one component ($m, n = 1$) and 2) the field consists of two components $E_o + E_s$, such that E_o has a constant phase and amplitude, while E_s is a random component. It is found that for

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Possibility of employing ....

the first case the expectation $U_o(\bar{r})$ depends on the invariable field characteristics as well as the statistical characteristics of the medium. It is further shown that use of the phase-meter system accentuates the relative fluctuations of the output signal so that these can be measured and investigated comparatively easily. Secondly, the method makes possible measuring the space correlation characteristics of the field fluctuations. In the case of the field consisting of the two components E_o and E_s, use of the method permits elimination of the constant field component, which facilitates measurement of the field fluctuations. The problem was investigated experimentally and it was found that in the direct-visibility zone the amplitude-phase fluctuations of the ultrashort waves were so small that there existed practical difficulties in effecting the measurements. Thus, for example, during 65 measurement periods conducted between Janugry and March, 1957, in 33 cases the relative fluctuation $\sigma_o^2 < 0.01$, in 20 cases $0.01 \leq \sigma_2 \leq 0.25$ and only in 12 cases $\sigma_o^2 > 0.25$.

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Possibility of employing ....

A series of measurements of amplitude-phase fluctuations was carried out in the autumn of 1959 at ultrashort waves by the phase-meter method and it was found that the low-frequency component of the amplitude-phase fluctuations was primarily determined by the phase-fluctuations of the field; on the other hand, the fast component was due to the amplitude-fluctuations. This was further confirmed by some measurements of auto-correlation functions of the amplitude- and amplitude-phase fluctuations of the field at a frequency of f = 9 350 Mc/s. A preliminary estimate of the mean square phase-fluctuations shows it to be of the order of 10^{-2} radians, which compares with data available from the literature (Ref. 6 - A.V. Men', S.Ya. Braude and V.I. Gorbach - DAN SSSR, 1959, 125, no. 5, 1019; Ref. 7 - D.M. Vysokovskiy - Some problems of long-distance tropospheric propagation of ultrashort radio waves, pub. by AS USSR, 1958).

Card 5/6

31984
S/142/61/004/004/005/018
E192/E382

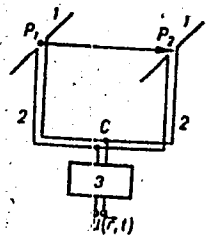
Possibility of employing ....

There are 4 figures and 7 Soviet-bloc references.

ASSOCIATION: Kafedra rasprostraneniya radiovoln Moskovskogo ordena Lenina gos. universiteta im. M.V. Lomonosova (Department of Radio-wave Propagation of Moscow Order of Lenin State University im. M.V. Lomonosov)

SUBMITTED: June 20, 1960

Fig. 1:



Card 6/6

28519
S/109/61/006/009/002/018
D201/D302

9.9815 (also 1036)

AUTHOR: Filipp, N.D.

TITLE: The fluctuation character of a UHF radiosignal propagated over an inhomogeneous surface

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 9, 1961, 1432 - 1441

TEXT: In the present article the author gives the results of experimental study of fluctuation characteristics of radiowaves at 10 cm frequency band over a 37 km direct propagation path, using diversity reception. A very complex field distribution was found across the propagation path (even within a few wavelengths). The theoretical analysis is carried out considering the schematic representation of a two path propagation as shown in Fig. 1. If the transmitter is at p.A and the receiver at point P, then the field $\mathcal{E}(P, t)$ at the receiving point is determined by the field of the direct $\mathcal{E}_1(P, t)$ and of the reflected ray $\mathcal{E}_2(P, t)$, where

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$$\mathcal{E}(P,t) = \mathcal{E}_1(P,t) + \mathcal{E}_2(P,t),$$
$$\mathcal{E}_1(P,t) = [E_{01}(P,t) + \Delta E_1(P,t)] \exp\{i[\varphi_{01}(P,t) + \Delta\varphi_1(P,t) - \omega t]\};$$
$$\mathcal{E}_2(P,t) = R(C)[E_{02}(P,t) + \Delta E_2(P,t)] \exp\{i[\varphi_{02}(P,t) + \Delta\varphi_2(P,t) - \omega t]\}. \quad (1)$$

To simplify further, notation arguemtns P, t are omitted. E_{01}, E_{02} φ_{01}, φ_{02} are the average values of amplitude and phase of the direct and reflected rays respectively. ΔE_1, ΔE_2, $\Delta\varphi_1$, $\Delta\varphi_2$ - the fluctuation components of the respective quantities, φ_{02} containing also the loss angle at reflection; R(C) - the modulus of the reflection coefficient. The modulus of the reflection coefficient depends not only on the electrical properties of the Earth's surface, but also on the geometry of the reflecting surface. Restricting the analysis to semi-spherical irregularities of the reflecting surface the reflection coefficient modulus R(C) is given by

$$R(C) = R_0 \sqrt{\frac{D(0)}{D(r_2)}}, \quad (2)$$

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The fluctuation character of ...

where R_0 - the reflection coefficient of an ideally conducting surface and

$$D(r_2) = \cos\theta + 2r_2\left[\left(\frac{1}{\rho_1} + \frac{1}{\rho_2}\right)\cos^2\theta + \frac{\sin\theta}{\rho_0}\right] + \frac{2r_2^2}{\rho_1\,\rho_2}\cos\theta;$$

where $D(r_2)S$ - the area of the normal cross-section of the ray reaching the elementary surface area at the point of incidence; θ - the angle of incidence; ρ_1 and ρ_2 - main radii of the curvature of normal cross-section of the surface; $K = 1/\rho_1\,\rho_2$ Gaussian curvature of the surface; ρ_0 - radius of the normal cross-section of the ray incidence area. Assuming small fluctuations of the field which is true for direct and short propagation paths

$$\overline{V(P,\,t)} = \overline{U(P,\,t)} = \alpha\{E_{01}[1 + R^2(C) + 2R(C)\cos\Delta\varphi_0]\} =$$

$$= \alpha\{\overline{\Delta E_1^2}(1 + R^2(C) + 2R(C)\rho_{\Delta E}\cos\Delta\varphi_0) - 2R(C)\,\overline{\Delta\varphi_1^2}(1 - \rho_{\Delta\varphi})\,x$$

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$$\times (E_{01}^2 + \overline{\Delta E_1 \Delta E_2}) \cos \Delta\varphi_0 \Big\}, \qquad (5)$$

is derived, giving the mean value of power fluctuation, in which $\rho_{\Delta E} = \overline{\Delta E_1 \Delta E_2}/E_1^2$ and $\rho_{\Delta\varphi} = \overline{\Delta\varphi_1 \Delta\varphi_2}/\Delta\varphi_1^2$ are the coefficients of space correlation of amplitude and phase fluctuations of direct and reflected waves at the aperture of the receiving antenna. The signal fluctuation at the output of the system is determined not only by the flucuations of amplitude and phase, but also by the degree of correlation of fluctuations ΔE_i and of phases $\Delta\varphi_i$ (i = = 1,2); expression (5) in the vicinity of maxima and minima of the mean level of the field reduces then to that of

$$\overline{V(P, t)} = \alpha \left\{\sigma_E^2 [1 + R^2(C) \mp 2R(C)\rho_{\Delta E}] \pm 2R(C)\, E_{01}^2\, \sigma_1^2 (1 - \rho_{\Delta\varphi})\right\}, \qquad (6)$$

and for relative fluctuations of the signal level

$$\frac{\overline{V(P, t)}}{U(P, t)} \simeq$$

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The fluctuation character of ...

$$\simeq \frac{\sigma_E^2\left[1+R^2(C)-2R(C)\rho_{\Delta E}\cos\left(2\pi\frac{\Delta r}{\lambda}\right)\right]+2R\sigma_1^2(1-\rho_{\Delta\varphi})(\overline{E_{01}^2+\Delta E_1\Delta E_2})\cos\left(2\pi\frac{\Delta r}{\lambda}\right)}{\overline{E_{01}^2\left[1+R^2(C)-2R(C)\cos\left(2\pi\frac{\Delta r}{\lambda}\right)\right]}}.$$

is given in which $\sigma_1^2 = (\Delta\varphi_2 - \Delta\varphi_1)^2$. The space correlation coefficient is then studied. It is assumed that there are two rays at the receiving end, the direct and reflected. If at points P_1 and P_2 there are two receiving antennae, then under several assumptions the space correlation coefficient takes the form of

$$\rho(P_1, P_2) = \frac{\overline{\Delta E_1\Delta E_2}(1\pm R_1\pm R_2+R_1R_2)+\overline{\Delta E_1'\Delta E_2'}(R_1^2R_2^2\pm R_1R_2^2\pm R_1^2R_2+R_1R_2)}{[\overline{\Delta E_1^2}(1\pm R_1)^2(1+R_1')\overline{\Delta E_2^2}(1\pm R_2)^2(1+R_2^2)]^{1/2}} \qquad (11)$$

when both antennae are in the vicinity of interference maxima or minima or of

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$$\rho(P_1, P_2) = \frac{\overline{\Delta E_1 \Delta E_2}(1 + R_1 - R_2 - R_1 R_2) + \overline{\Delta E_1' \Delta E_2'}(R_1^2 R_2^2 + R_1 R_2^2 - R_1^2 R_2 - R_1 R_2)}{[\overline{\Delta E_1^2}(1 + R_1)^2(1 + R_1^2)\,\overline{\Delta E_2^2}(1 - R_2)^2(1 + R_2^2)]^{1/2}} \quad (12)$$

when one antenna is in the vicinity of a maximum and the other in the vicinity of a minimum. It follows from (11) and (12) that the space correlation of amplitude fluctuations in propagation over an imperfect and rough surface has lobes. The time correlation coefficient $\rho(P, \tau)$ is given as

$$\rho(P, \tau) = \frac{\overline{U(P, t)\,U(P, t+\tau)} - \overline{U(P, t)}\;\overline{U(P, t+\tau)}}{[\overline{U^2(P, t)} - (\overline{U(P, t)})^2]\,[\overline{U^2(P, t+\tau)} - (\overline{U(P, t+\tau)})^2]^{1/2}} =$$

$$= \frac{\overline{\Delta E_1 \Delta E_{1\tau}}\,|(1 \pm R)^2 + (R^2 \pm R)^2|}{\overline{\Delta E_1^2}\,|(1 \pm R)^2 + (R^2 \pm R)^2|} = \frac{\overline{\Delta E_1 \Delta E_{1\tau}}}{\overline{\Delta E_1^2}} = \rho_{\text{free space}}(\tau). \quad (18)$$

The receiving antenna is at point P, U(P, t) and U(P, t + τ) are signals at the output of quadratic detector at Point P in the presence of the reflecting surface and $\rho_{\text{freespace}}(\tau)$ - the coefficient

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The fluctuation character of ...

of autocorrelation in free space. This distribution does not exhibit any lobes. It may be seen from the above that fluctuations at the output of the receiving system, in the presence of a rough, reflecting earth surface, differ from each other at various points along the propagation path. The authors give next some of the results obtained in an experiment which was carried out between June 1959 and June 1960 over an open land propagation path 37 km long. From the character of the propagation path it could be expected that the reflection coefficient would be negligible everywhere except in the vicinity of the receiving end. At one end was situated a pulse transmitter, peak power 80 kW, carrier frequency f = 3000 Mc/s, repetition frequency 400 p.p.s. and pulse length 1 microsec. The maximum deviation of the path profile from a spherical shape was about 50 m. The receiver used diversity reception with automatic signal strength registration. The experiment consisted of measuring the transverse correlation of the field intensity fluctuations in horizontal plane, under strict control of stability of both the transmitter and receiver parameters. Measurements were carried out 3 times a day during 30 - 80 mins. The antennae base

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was varied between 1-40 wavelengths, the envelope of amplitude of pulse signals received was photographed for 5-7 minutes. The speed of film was varied, to suit the character of fluctuations, from 1-10 mm/sec. Graphs are shown of the averaged level of the field E, of the coefficient of shape - transverse correlation $\rho(s)$ and of dispersion $\sigma_u^2(s)$ of the received signal during one of the periods observations. Also, the experimentally determined values are shown of the time autocorrelation coefficient for different points of the space, in which the average level of the field, relative fluctuations and their dispersion differed noticeably. The author acknowledges the help of A.A. Semenov and of G.A. Karpeyev. There are 6 figures and 12 references: 11 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: R.B. Muchmore, A.D. Wheelon, Proc. I.R.E., 1955, 43, 10, 1437.

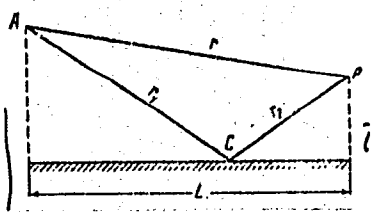
ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova, Kafedra rasprostraneniya radiovoln (Moscow State University im. M.V. Lomono-

The fluctuation character of ...

sov, Faculty of Physics, Department of Propagation of Radiowaves)

SUBMITTED: September 30, 1960

Fig. 1.



Card 9/9

SYRTSOVA, G.P.; FILIPP, V.Z.

Diamino- and acylamino compounds of trivalent cobalt with β-benzildioxime. Uch.zap.Kish.un. 68:24-28 '63 [cover '64]. (MIRA 18:12)

FILIPPENKO, A.

Workers of the Rostov harbor making efforts to carry out the seven-year plan. Mech.transp. 19 no.5:9-10 My '60. (MIRA 13:7)

1. Nachal'nik Rostovskogo porta.
(Rostov-on-Don--Harbors)
(Cargo handling)

FILIPPENKO, A.

Frontiers of the seven-year plan are calling. Rech. transp. 21 no.12:20-21 D '62. (MIRA 15:12)

1. Nachal'nik Rostovskogo porta.
(Inland water transportation)

RETSEPTOR, Ya. (g.Moskva); SHAKIROV, O.; NOAK, A.; SEREBRYANIKOV, G., ekonomist; KHAIT, M.; FILIPPENKO, A.; SULEYMANOV, A. (Dagestanskaya ASSR); GRIGOR'YEV, A.; DZHURINSKIY, N. (g.Kishinev); MALYUKHA, L. (g.Klin); POLISHCHUK, I. (g.Pervoural'sk, Sverdlovskoy obl.); GRIZODUB, Yu. (G.Frunze); CHIGAREV, A.

Letters to the editors. Sots. trud 6 no. 1:136-141 Ja '61. (MIRA 14:1)

1. Glavnyy inzh.shakhty No. 31 tresta Kirovugol', g.Karaganda (for Shakirov). 2. Nachal'nik planovogo otdela shakhty No. 31 tresta Kirovugol', g. Karaganda (for Noak). 3. Glavnyy bukhgalter stroitel'nogo upravleniya "Tyazhmashstroy", g.Kramatorsk, Stalinskoy obl. (for Khait). 4. Nachal'nik otdela truda i zarabotnoy platy vol'skogo zavoda "Metallist" (for Filippenko). 5. Nachal'nik otdela truda i zarabotnoy platy leningradskogo zavoda "Kinap" (for Grigor'yev). 6. Pavinskiy l'nozavod Kostromskoy oblasti (for Chigorev).
(Wage payment systems) (Industrial management)

AKSENOV, Aleksey Gavrilovich; LUR'YE, M.Ye., inzh., red.; RUSIN, V.N., retsenzent; FILIPPENKO, A.A., retsenzent; VITASHKINA, S.A., red.izd-va; [illegible] tekhn.red.

[Marine refrigeration plants] Sudovye kholodil'nye ustanovki. Pod red. M.E.Lur'e. Moskva, Izd-vo "Rechnoi transport," 1959. 183 p. (MIRA 12:12)
(Refrigeration on ships)

8(6), 11(7) SOV/91-59-7-5/21

AUTHOR: Fedorov, A.N., Engineer, Filippenko, A.A.

TITLE: Improving the Work of Boilers Using Sulfurous Mazut

PERIODICAL: Energetik, 1959, Nr 7 pp 11-12 (USSR)

ABSTRACT: The authors describe two single-drum boilers TsKTI 50-39-FM producing 50 tons of steam per hour, which were installed at an unidentified thermal power plant in 1952. Mazut of types 20 and 40 containing up to 5% sulfur was used as fuel. They further describe, the deficiencies observed during the operation of the boilers. The air heater had to be cleaned after 600-720 hours of operation due to excessive soot presipitation. The refractory bricks in the stoker were insufficiently cooled, requiring relining of the stoker after 1-2 years. The authors of this article suggested air ducts on the floor of the stoker as shown in two diagrams. The air passing thru these ducts is heated to 500 - 600 ^{o} C and enters the blower intake

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Improving the Work of Boilers Using Sulfurous Mazut

where it is mixed with cold air. A slide valve is used for controlling the air flow. This modification enabled the operation of the boilers for 2,000 to 2,300 hours without removing accumulated soot. There are 2 diagrams

FILIPPENKO, Aleksandr Aleksandrovich; CHICHKOV, N.V., red.; NIKOLAYEVA, N.G., red.; MEDRISH, D.M., tekhn.red.

[Safety measures and fire prevention engineering] Tekhnika bezopasnosti i protivopozharnaia tekhnika. Moskva, Gosstorgizdat, 1963. 166 p. (MIRA 16:12)
(Refrigeration and refrigerating machinery—Safety measures)
(Fire prevention)

ROZENTAL', D.A.; FILIPPENKO, A.I.

Effect of physicochemical parameters and catalyzers on the oxidation rate of bitumen of the Ukhta oilfield. Zhur. prikl. khim. 37 no.11:2550 N '64 (MIRA 18:1)

4(5) SOV/16-59-6-8/46

AUTHORS: Korovin, F.T., Nuzhdin, I.D. and Filippenko, A.I.

TITLE: Disinfection as a Means of Antibacteriological Defense

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1959, Nr 6, pp 40-44 (USSR)

ABSTRACT: The authors deal with the principles and methods of decontamination and disinfection in bacteriological warfare. The information is based on foreign manuals and pamphlets on the subject, mostly US. There are 3 American references.

SUBMITTED: December 16, 1958

Card 1/1

ALEKSANDROV, N.I.; GEFEN, N.Ye.; BUDAK, A.P.; YEZEPCHUK, Yu.V.; FILIPPENKO, A.I.; RUNOVA, V.F.

Search for effective chemical vaccines against some zoonoses. Report No.1: Production of chemical by deposited anthrax vaccine and study of its effectiveness in animal experiments. Zhur. mikrobiol. epid. i immun. 32 no.5:42-46 My '61. (MIRA 14:6)
(ANTHRAX)

ALEKSANDROV, N.I.; GEFEN, N.Ye.; RUDNEVA, O.A.; LEBEDINSKIY, V.A.; OGARKOV, V.I.; MAKHROV, N.F.; FILIPPENKO, A.I.

Research on effective chemical vaccines against some zoonoses. Report No.2: Development of a chemical brucellosis vaccine and study of its effectiveness in experiments on animals. Zhur. mikrobiol., epid. i immun. 32 no.11:66-72 N '61. (MIRA 14:11)
(BRUCELLOSIS) (VACCINES) (ZOONOSES--PREVENTION)

ALEKSANDROV, N.I.; GEFEN, N.Ye.; RONOVA, V.F.; BUDAK, A.P.; YEZHEPCHUK, Yu.V.
LEBEDINSKIY, V.A.; FILIPPENKO, A.I.

Improvement of the culture medium and search for a method of purifying the protective anthrax antigen. Zhur. mikrobiol. epid. i immun. 40 no.1:103-107'63. (MIRA 16:10)

ALEKSANDROV, N.I.; GEFEN, N.Ye.; DOBROVOL'SKIY, K.F.; YEZEPCHUK, Yu.V.; LEBEDINSKIY, V.A.; MIKHAYLOV, B.Ya.; RUNOVA, V.F.; SEREGINA, A.I.; FILIPPENKO, A.I.

Immunogenicity of chemical anthrax vaccine in experiments on sheep. Zhur. mikrobiol., epid. i immun. 42 no.1:57-60 Ja '65.
(MIRA 18:6)

L 13096-66 EWT(1)/EWA(j)/T/EWA(b)-2 JK

ACC NR: AP6006641 SOURCE CODE: UR/0016/65/000/001/0057/0060

AUTHOR: Aleksandrov, N. I.; Gefen, N. Ye.; Dobrovol'skiy, K. F.; Yezepchuk, Yu. V.; Lebedinskiy, V. A.; Mikhaylov, B. Ya.; Rimova, V. F.; Seregina, A. I.; Filippenko, A. I.

ORG: none

33
B

TITLE: Immunogenicity of chemical anthrax vaccine tested in sheep

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1965, 57-60

TOPIC TAGS: vaccine, immunology, anthrax

ABSTRACT: The authors improved the chemical anthrax vaccine that they had developed several years before. Single as well as double inoculations of sheep produced immunity to infection from 100 Dcl of virulent anthrax bacillae. Further research is needed to determine the minimal immunizing dose for sheep and the duration of the immunity. Orig. art. has: 3 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 29Jun63 / ORIG REF: 003 / OTH REF: 008

Card 1/1 HW

UDC: 616.981.51-085.372-036.8-092.9

S/191/61/000/001/003/015
B101/B205

AUTHORS: Akutin, M. S., Smirnova, L. N., Filippenko, D.

TITLE: Interfacial polycondensation

PERIODICAL: Plasticheskiye massy, no. 1, 1961, 10 - 11

TEXT: A study has been made of the acceleration of condensation of epoxy resin with dephenylol propane (DPP) by interfacial polycondensation, using diphenylol propane (melting point, 153-156° C) and commercial 97% epichlorohydrin (EPC). The DPP:EPC ratio was 1:1.25, 1:1.5, 1:2.3, or 1:8. The end of the reaction was ascertained from the DPP content of the aqueous alkaline solution. The percentage of epoxy groups, 8% at 1:1.25, rose to 20% at 1:8. Fig. 2 shows that the optimum concentrations of the sodium salts of DPP and EPC are obtained in the aqueous and organic phase, respectively. At this concentration, a resin with maximum content of epoxy groups is obtained. Besides, the content of epoxy groups depended on the organic solvent used for the purpose. Solvents in which the forming resin was unsoluble, yielded resins with a lower content of epoxy groups. At an

Card 1/3

Interfacial polycondensation

initial ratio between the components of 1:8, for example, it was 15.9% for cyclohexanone and 20.6% for n-butanol. The highest content of epoxy groups was obtained from n-butanol at any ratio. Polycondensation could be shortened by thorough mixing and an increase of temperature from 35 to 90° C. Mixing, temperature increase, and condensation time had no effect on the content of epoxy groups. The reaction time of interfacial polycondensation was 15-50 min as compared to a time of 120-360 min required to perform polycondensation by fusion of the components.
There are 3 figures, 2 tables, and 4 references: 1 Soviet and 3 US.

Interfacial polycondensation

Legend to Fig. 2:
a) EPC concentration, %
b) content of epoxy groups, %;
DPP concentration in water for 1 - 3 equal to 30 % and for 4 equal to the EPC concentration; DPP:EPC ratio for curve 1 = 1:8; for curve 2 = 1:2.3; for curve 3 = 1:1.5; for curve 4 = 1:1.25.

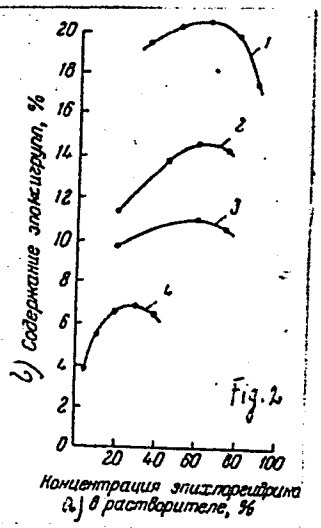


Fig. 2

Card 3/3

L 22442-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6006361 (A) SOURCE CODE: UR/0413/66/000/002/0095/0095

AUTHOR: Gorbunov, V. N.; Filippenko, D.-M.

ORG: none

TITLE: Preparation of epoxy compositions. Class 39, No. 178105 [announced by Scientific Research Institute of Plastics (Nauchno-issledovatel'skiy institut plasticheskikh mass)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 95

TOPIC TAGS: epoxy plastic, cyclohexane, polymerization

ABSTRACT: This Author Certificate describes a method for preparing epoxy compounds by mixing vinylcyclohexene monoxide and an unsaturated polymerizing compound in the presence of free-radical polymerization initiators. To lower the viscosity of the composition and raise the heat resistance of the cured product, dicarboxylic acid anhydrides, such as maleic and anhydride, are proposed for use as unsaturated compounds. Ionic-type catalysts will accelerate the hardening process.

[LD]

SUB CODE: 11/ SUBM DATE: 05Oct63

Card 1/1 UDC: 678.746.4-134.434

L 44577-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6015662 (A) SOURCE CODE: UR/0413/66/000/009/0074/0074

INVENTOR: Gorbunov, V. N.; Rydvanova, S. S.; Filippenko, D. M.; Potapova, V. A.

ORG: none

TITLE: Method of preparing low-viscosity epoxy compounds. Class 39, No. 181282 [announced by State Scientific Research Institute for Plastics (Gosudarstvennyy nauchno-issledovatel'skiy institut plasticheskikh mass)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 74

TOPIC TAGS: epoxy compound, low viscosity epoxy compound

ABSTRACT: This Author Certificate introduces a method of preparing low-viscosity epoxy compounds which can be hardened with anhydrides of carboxylic acids by mixing the epoxy resin with vinylcyclohexene monoxide as an active diluent. To expand the raw-material range of low-viscosity epoxy compounds, epoxidized, unsaturated oligomers, such as epoxidized divinylstyrene oligomer are suggestes as the epoxy

Card 1/2 UDC: 678.746.22-136.22.043:66.063.932

L 44577-65

ACC NR: AP6015662

resin. Catalysts for free-radical polymerization are suggested as an additional component. [Translation] [LD]

SUB CODE: 11/ SUBM DATE: 02Nov63/

Card 2/2

FILIPPENKO, G. I.

20851. Filippenko, G. I. & Zonov, I. I. Kolkhoznyye agrotekhnicheskiye laboratorii --ochagi agrokul'tury. Sots. sel. Khoz-vo Uzbekistana, 1949, No. 1, s. 35-41.

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949.

FILIPPENKO. G?

"Effect of Suckering on Ripening and Increase in Yield of the Cotton Plant," Khlopkovodstvo, No.6, 1952

FILIPPENKO, G. I.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr. 1954)

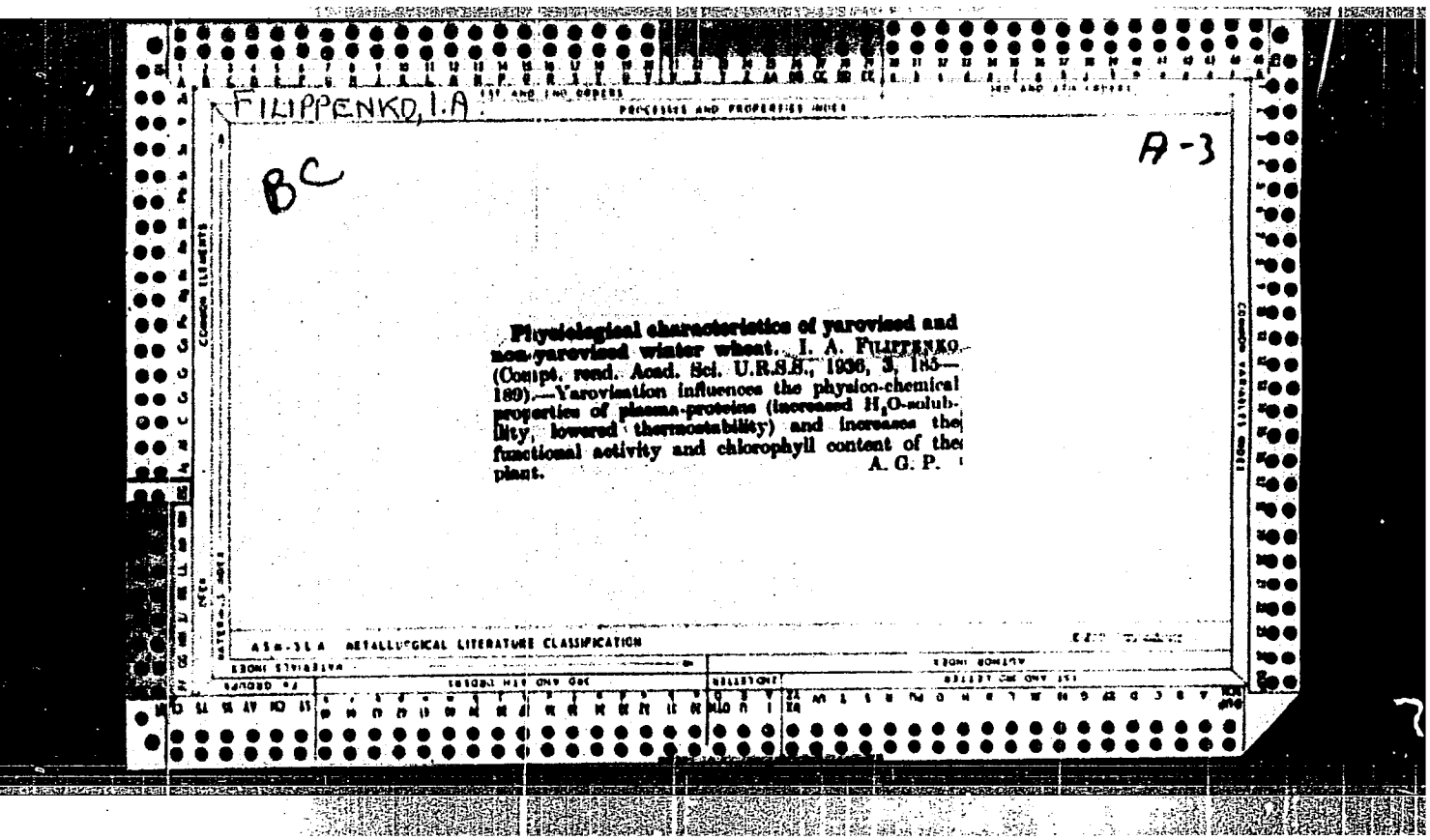
Name	Title of Work	Nominated by
Filippenko, G. I.	"Cotton Growing" Textbook	Ministry of Agriculture Uzbek SSR

SO: W-30604, 7 July 1954

FILIPPENKO, Grigoriy Iosifovich

[The "Oktiabr" collective cotton farm] Khlopkovodcheskii kolkhoz "Oktiabr'" [Tashkent] Ministerstvo sel'skogo khoziaistva UzSSR, 1955. (MLRA 9:12)

(Uzbekistan--Cotton growing)



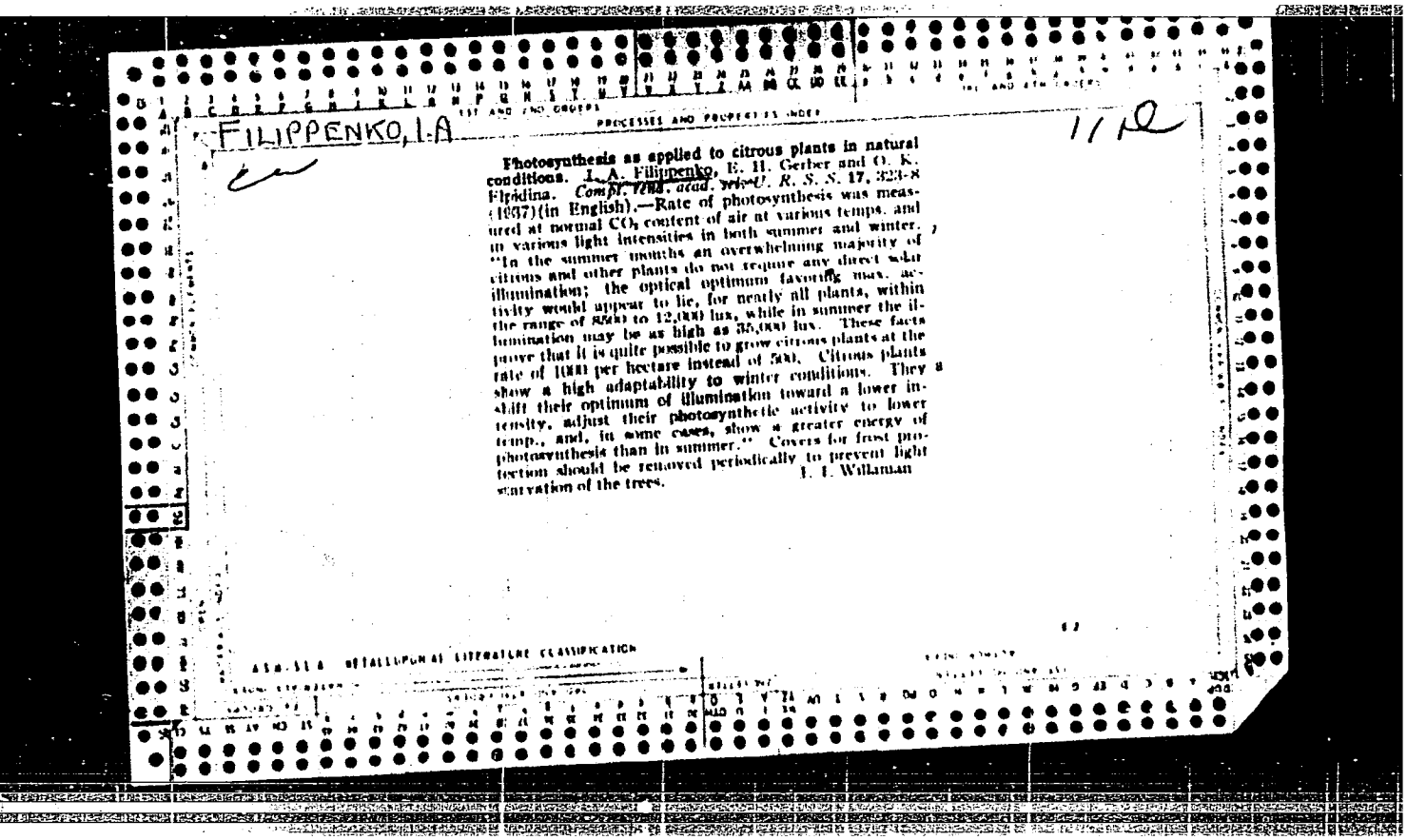
FILIPPENKO, I.A.

BC

A-3

Physiological characteristics of yarovized and non-yarovized winter wheat. I. A. FILIPPENKO. (Compt. rend. Acad. Sci. U.R.S.S., 1936, 3, 185—189).—Yarovization influences the physico-chemical properties of plasma-proteins (increased H_2O-solubility, lowered thermostability) and increases the functional activity and chlorophyll content of the plant. A. G. P.

A58-31A METALLURGICAL LITERATURE CLASSIFICATION



FILIPPENKO, I.A

PROCESSES AND PROPERTIES INDEX

Photosynthesis as applied to citrous plants in natural conditions. I. A. Filippenko, E. H. Gerber and O. K. Flodina. *Compt. rend. acad. sci. U. R. S. S.* 17, 323-8 (1937)(in English).—Rate of photosynthesis was measured at normal CO_2 content of air at various temps. and in various light intensities in both summer and winter. "In the summer months an overwhelming majority of citrous and other plants do not require any direct solar illumination; the optical optimum favoring max. activity would appear to lie, for nearly all plants, within the range of 8000 to 12,000 lux, while in summer the illumination may be as high as 35,000 lux. These facts prove that it is quite possible to grow citrous plants at the rate of 1000 per hectare instead of 500. Citrous plants show a high adaptability to winter conditions. They shift their optimum of illumination toward a lower intensity, adjust their photosynthetic activity to lower temp., and, in some cases, show a greater energy of photosynthesis than in summer." Covers for frost protection should be removed periodically to prevent light starvation of the trees.

I. I. Willaman

FILIPPENKO, I. A.

11

PROCESSES AND PROPERTIES INDEX

Formation of bios in the yarovized embryos of winter wheat. I. A. Filippenko. *Compt. rend. acad. sci. U. R. S. S.* 17, 329-32(1937)(in English); cf. *C. A.* 31, 6281[9].—Embryos of yarovized seeds contained 3-8 times as much bios as the unyarovized seeds. In one case the bios increased with length of yarovization up to 50 days, in another case it was greatest in the 10-day sample.

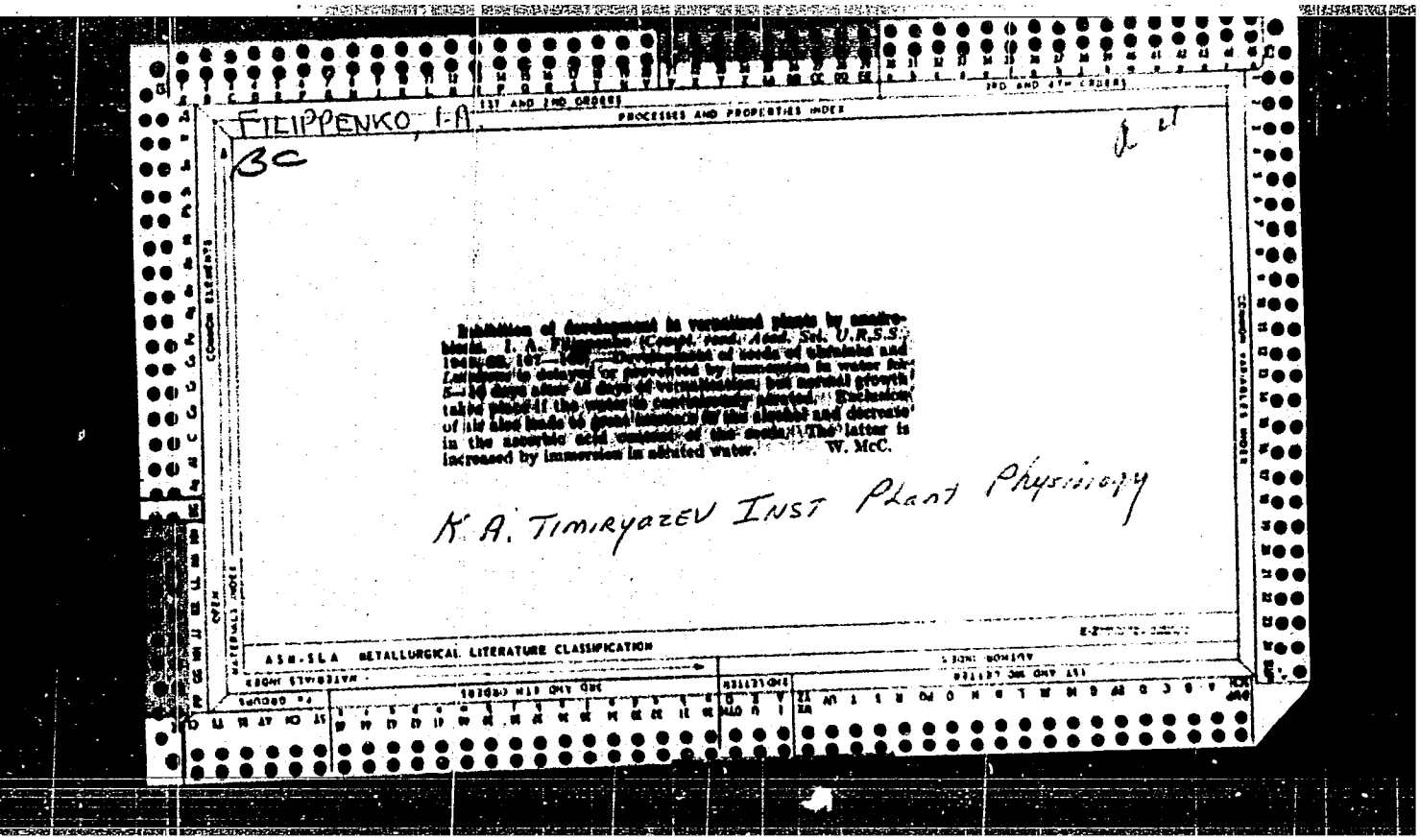
J. J. Willaman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FILIPPENKO, L. I. A.

"Yarovization of Sed of Agricultural Plants by Immersion in Water," Dok. An. Vol. 23, No. 6, 1939.

Timiriazev Inst. of Plant Physio.



FILIPPENKO, I. A.

Effect of 2,4-D on form development in summer wheat.
I. A. Filippenko (E. A. Timiryazev Inst. Plant Physiol., Moscow). Tr. Inst. Rastenii 3, No. 3, 440-5(1956).—Spray-
ing of aq. solns. of Na salt of 2,4-D during the three-leaf
stage alters the structure of the stem and ear, with branch-
ing [illegible]

M-4

COUNTRY : USSR
CATEGORY :

ABS. JOUR. : RZBiol., No. 19, 1958, No. 86977

AUTHOR : Filippenko, I. A.
INST. : Academy of Sciences USSR
TITLE : Alteration of the Nature of Winter Wheat Depending on Conditions of Vernalization.

ORIG. PUB. : Sb.:"Pamyati akad. N.A. Maksimova", Moscow, AN SSSR, 1957, 193-196

ABSTRACT : Experiments of the Institute of Plant Physiology of the Academy of Sciences USSR. Seeds of winter wheat with the principal growing point cut off before or after vernalization, when planted in the spring produce, under favorable conditions, copious tillering -- up to 8-12 productive stems that are biologically disparate. Early removal of principal growing point prior to vernalization accelerates spike formation, in comparison with the other variant. In the second generation of plants, vernalized in 1948 without growing point and sowed in the spring of 1949 without vernalization. there were isolated forms that were typically winter-wheat, and other forms

CARD: 1/2

FILIPPENKO, I.A.

FILIPPENKO, I.A.

Effect of 2,4-D on the quality of wheat seed [with summary in English]. Fiziol. rast. 4 no.5:470-475 S-O '57. (MIRA 10:11)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva AN SSSR, Moskva.
(Wheat) (2,4-D) (Seeds)

FILIPPENKO, I.A.

Inheritance of some physiological changes in wheat induces by 2,4-D.
Fiziol.rast. 5 no.5:453-455 S-O '58. (MIRA 11:11)

1. Institut fiziologii rasteniy imeni K.A. Timiryazeva AN SSSR, Moskva.
(Wheat) (Plants, Effect of 2,4-D on)

FILIPPENKO, I. A.

Cand Biol Sci - (diss) "Effect of 2,4-D on the ontogenesis and seed quality of wheat." Moscow, 1961. 19 pp; (Moscow Oblast' Pedagogical Inst imeni N. K. Krupskaya); 200 copies; price not given; (KL, 5-61 sup,185)

FILIPPENKO, I.A.; PAVIOVA, L.I.

Effect of large amounts of 2,4-D on the yield of summer wheat. Fiziol. rast. 11 no.4:603-606 Jl-Ag '64.
(MIRA 17:11)

1. Institut fiziologii rasteniy imeni Timiryazeva AN SSSR, Moskva.

SOKOLOV, F.A., kand. sel'khoz. nauk; KOKUYEV, V.I., kand. sel'-khoz. nauk; SHAFRIN, A.N., zasl.agr.Uzb.SSR; KONDRATYUK, V.P., kand. sel'khoz. nauk; MALINKIN, N.P., doktor sel'khoz. nauk; YEREMENKO, V.Ye., doktor sel'khoz. nauk [deceased]; MEDNIS, M.P., kand.biol. nauk; FILIPPENKO, G.I., kand. sel'khoz. nauk; USPENSKIY, F.M., kand. biol. nauk; SOLOV'YEVA, A.I., kand. sel'khoz. nauk; PRUGALOV, A.M., kand.sel'khoz. nauk [deceased]; ZAKIROV, T.S., kand. sel'khoz. nauk; FRENKIN, V.M., zasl. mekhanizator UzSSR; GORELIK, I.M., red.; ABBASOV, T., tekhn. red.

[Cultivation practices in cotton growing] Agrotekhnika khlopchatnika. Tashkent, Gos.izd-vo UzSSR, 1963. 326 p. (MIRA 17:1)

(Uzbekistan--Cotton growing)

FILIPENKO, I. M.

Fruit Culture

To solve the basic questions of fruit culture., Sad i og., no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 1952, Uncl.

FILIPENKO, I. M.

"Leaf Feeding of Grapevines," Vin. SSSR, 12, No.2, 1952

FILIPPENKO, I. M.

Name: FILIPPENKO, I. M.

Dissertation: The agrobiological properties of elite grape seedlings selected by TsGL imeni I. V. Michurin and some peculiarities in the development and fertility of grape vines

Degree: Cand Agr Sci

Affiliation: Min Agriculture USSR, Fruit and Vegetable Inst imeni I. V. Michurin

Defended at Publication

Defense Date, Place: 1956, Michurinsk

Source: Knizhnaya Letopis', No 47, 1956

FILIPPENKO, I.M.

Some fruiting characteristics of the grapevine. Biul.nauch.-tekh. inform.TSGL no.1:27-31 '56. (MIRA 12:1)
(Viticulture)

FILIPPENKO, I.M.

Accelerated fruiting in grape seedlings. Biul.nauch.-tekh. inform.TSOL no.2:7-12 '56. (MIRA 12:1)
(Viticulture)

USSR/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82536

Author : Filippenko, I.M.

Inst : Central Genetics Laboratory im. I.V. Michurin

Title : Relation of the Height of the Attachment of Clusters on the Shoots of the Grape Plant to the Coefficient of Fruiting

Orig Pub : Byul. nauchno-tekhn. inform. Tsentr. genet. labor. im. I.V. Michurina, 1957, vyp. 3, 32-34

Abstract : Studies at the laboratory showed that the height of the attachment of the grape clusters on the shoot is determined by the value of the fruiting coefficient of the variety with given agrotechniques and by the influence of the conditions of external environment in the year of the formation of embryo shoots on metabolism in the shoots.

Card 1/2

USSR/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82531

Author : Filippenko, I.M.

Inst : Central Genetics Laboratory imeni I.V. Michurin

Title : Dynamics of Dry Substances in Grape Shoots after Green Operations.

Orig Pub : Byul. nauchno-tekhn. inform. Tsentr. genet. labor. im. I.V. Michurina, 1957, vyp. 3, 35-37

Abstract : On the vines of the elite seedling No 1 (Seedling Malengra x Getsh) at the Central Genetic Laboratory (Michurinsk), changes were studied in the dry matter content (refractometrically) in the 5th, 10th, 15th and 20th nides of the shoots operated, on the 3rd, 6th and 10th day after pinching, suckering and removal of leaves which was carried out on the 20th of July in all variants.

Card 1/3

USSR/Cultivated Plants - Fruits. Berries.

M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82536

Author : Filippenko, I.M.

Inst : Central Genetics Laboratory im. I.V. Michurin

Title : Relation of the Height of the Attachment of Clusters on the Shoots of the Grape Plant to the Coefficient of Fruiting

Orig Pub : Byul. nauchno-tekhn. inform. Tsentr. genet. labor. im. I.V. Michurina, 1957, vyp. 3, 32-34

Abstract : Studies at the laboratory showed that the height of the attachment of the grape clusters on the shoot is determined by the value of the fruiting coefficient of the variety with given agrotechniques and by the influence of the conditions of external environment in the year of the formation of embryo shoots on metabolism in the shoots.

Card 1/2

USSR/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 18, 1953, 82536

The higher the coefficient of fruiting in a variety and the more clusters on a shoot, the lower they are attached. In 1954, in the variety Tambovskiy zelenyy (with a high coefficient of fruiting), 47% of the shoots with one cluster were located on the third node, 98.6% with two clusters, 100% with three and four clusters. On the second node - 8.4% of the shoots with one cluster, 60.4% with two clusters, 100% each with three and four clusters. Such low position of the clusters with their larger number was observed in other varieties also. -- Ye.T. Zhukovskaya

Card 2/2

USSR/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82531

Author : Filippenko, I.M.

Inst : Central Genetics Laboratory imeni I.V. Michurin

Title : Dynamics of Dry Substances in Grape Shoots after Green Operations.

Orig Pub : Byul. nauchno-tekhn. inform. Tsentr. genet. labor. im. I.V. Michurina, 1957, vyp. 3, 35-37

Abstract : On the vines of the elite seedling No 1 (Seedling Malen-gra x Getsh) at the Central Genetic Laboratory (Michu-rinsk), changes were studied in the dry matter content (refractometrically) in the 5th, 10th, 15th and 20th nides of the shoots operated, on the 3rd, 6th and 10th day after pinching, suckering and removal of leaves which was carried out on the 20th of July in all variants.

Card 1/3

M

USSR/Cultivated Plants - Fruits. Berries.

Abs Jour : Ref Zhur Biol., No 18, 1958, 82531

On the 3rd day after the operation, an increase in the dry matter content was observed in the variants in which the top and the suckers above the third node were pinched off. With a complete breaking off of the suckers this increase was not observed, and with the removal of the suckers and leaves, the dry matter content dropped considerably because the assimilating surface was sharply reduced. Later (on the 6 - 10th day), an increase in the dry matter content was noted in all variants, especially in the upper nodes of the shoots where the growth processes were beginning to resume. Increase in the dry matter concentration in the nodes contributed to the improvement in the feeding and development of the buds forming on them and the fertility of which became greater. Complete removal of the suckers promoted a reduction of the dry matter concentration, resumption of the growth tendencies and of the sprouting of the wintering eyes with a great

Card 2/3

USSR/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82531

decrease in the assimilating surface. -- V.V. Arkhangel'-skaya

Card 3/3

FILIPPENKO, I.M.

Maturation of shoots in the grapevine. Biul. nauch.-tekh. inform. TSGL no.4:13-19 '57. (MIRA 12:1)
(Viticulture)

FILIPPENKO, I.M., kand. sel'skokhoz. nauk

Characteristics of development and fruit bearing in the grapevine. (MIRA 12:10)
Trudy TSGL 6:199-238 '57.
(Viticulture)

KUZ'MIN, A.Ya., kand. sel'skokhoz. nauk; FILIPPENKO, I.M., kand. sel'skokhoz. nauk

From the results of grape breeding. Trudy TSGL 6:239-262 '57. (MIRA 12:10)

(Grapes--Varieties)

FILIPPENKO, I. M., kand. sel'skokhoz. nauk

Effect of pinching shoots and water sprouts on the bearing capacity of grapevine buds. Trudy TSGL 6:489-499 '57. (MIRA 12:10)

(Viticulture)

FILIPPENKO, Ivan Maksimovich

[Collective farmer's personal vineyard] Priusadebnyi vinogradnik. Moskva, Gos. izd-vo selkhoz lit-ry, 1958. 164 p. (MIRA 12:1)
(Viticulture)

FILIPPENKO, I.M.

Absorption of water by plant roots during the spring period of sap motion. Fiziol. rast. 5 no.2:175-177 Mr-Ap '58. (MIRA 11:4)

1.TSentral'naya geneticheskaya laboratoriya im. I.V. Michurina, Michurinsk. (Plants--Absorption of water)

M

Country : USSR
Category : CULTIVATED PLANTS. FRUITS. Berries.
Abs. Jour. : REF ZHUR-BIOL.,21,1958,NO-96147
Author : Filippenko, I.M.
Institut. : --
Title : Peculiarites in the Stage Development and Fruit-bearing of the Grapevine

Orig. Pub. : Zh.obshch. biol., 1958, 19, No.2, 121-138

Abstract : The investigations were made at Zhershkovskaya Experimental Station (in Odesskaya Oblast') and at the Central Genetics Laboratory (Michurinsk) in 1952-1955. Experimentation in trimming the grape seedlings above the cotyledonary node, above the 5-6th and above the 10-12th nodes while leaving a single top shoot behind have shown that the closer to the base of the seedlings the shoot had developed, the higher on this was the first tendril or inflorescence located. When the shoots were topped on fruiting vines of various varieties of

Card: 1/5

M

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413110013-7"

Category : CULTIVATED PLANTS. FRUITS. Berries.
Abs. Jour. : REF ZHUR-BIOL.,21,1958,NO-96147
Author :
Institut. :
Title :

Orig. Pub. :

Abstract : Vitis vinifera 3-15 flowers came to be produced on the tendrils, the fruit developing normally there. Similar results were obtained with Ampelopsis. These experiments have indicated that the tendril is an organ, homologous to the inflorescence and qualitatively distinct from the sprout, inasmuch as flowers never develop directly on it. Grape seedlings grown at a temperature never below 14° formed tendrils and fruit buds, indicating their passage through the vernalization stage at the

Card: 2/5

Country :
Category : CULTIVATED PLANTS. FRUITS

Abs. Jour. : REF ZHUR-BIOL.,21,1958,NO-96147

Author :
Institut. :
Title :

Orig. Pub. :

Abstract : developmental cycle, many vegetative cones which have not gone through the third stage of development and have the ability to form vegetative organs. Thus fruitbearing bushes should not be called old in stage as they are wont to be considered today. The change in growth of the grape seedlings from monopodial to sympodial dichotomy is explicable by the apical meristem of the shoot having completed all stages of development and producing the floral shoot. The basic growing cone

Card: 4/5

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413110013-7"

Category : CULTIVATED PLANTS. FRUITS

Abs. Jour. : REF ZHUR-BIOL.,21,1958,NO-96147

Author :
Institut. :
Title :

Orig. Pub. :

Abstract : of the grape seedling passes through all stages of developemnt in 1½-2 months and forms a tendril. The embryonic sprouts in the buds also go through stage development, so the inflorescences can also form on the shoots arising from the lowest stem part of the seedling, among which is the cotyledonary node. Accelerated fruiting in the seedlings takes place by strengthening plant growth, increasing the concentration of nutrients and applying a system of pinching shoots and suckers during the first years of the seedling's life.--I.K. Fortunatov

Card: 5/5

FILIPPENKO, I.M., kand. sel'skokhozyaystvennykh nauk

Results of studying the vegetation period of grapes in Michurinsk.
Biul. nauch. inform. TSGL no.7/8:21-32 '59. (MIRA 13:1)
(Michurinsk--Viticulture)

FILIPPENKO, I.M., kand.sel'skokhozyaystvennykh nauk

Effect of gibberellic acid on the growth, development, and fruiting of grapevines. Agrobiologiia no.5:770-773 S-O '60. (MIRA 13:10)

(Gibberellic acid) (Viticulture)

FILIPPENKO, I.M., kand. sel'skokhozyaystvennykh nauk

Effect of the temperature and length of the day on the growth and development of grape seedlings. Agrobiologiia no.6:810-813 N-D '61. (MIRA 15:2)

1. TSentral'naya geneticheskaya laboratoriya imeni I.V. Michurina, g. Michurinsk.

(Grapes)
(Plants, Effect of temperature on)
(Plants, Effect of light on)

FILIPPENKO, I.M., kand.sel'skokhozyaystvennykh nauk

Grape breeding in the central part of the U.S.S.R. Trudy TSGL 7:43-71 '61. (MIRA 15:10)

(Grape breeding)

TOVSTANOVSKIY, Dmitriy Pavlovich; NESTEROV, Petr Grigor'yevich; VOVK, Aleksey Anufriyevich; FILIPPENKO, I.T., inzh., retsenzent; AFONINA, G.P., red.izd-va; SHAFETA, S.M., tekhn. red.

[Labor productivity in Ukrainian mining enterprises]Proizvoditel'nost' truda na gornorudnykh predpriiatiiakh Ukrainy. Kiev, Gostekhizdat, USSR, 1963. 255 p. (MIRA 16:3)
(Ukraine—Mining engineering—Labor productivity)

FILIPPENKO, I. V.

36289 Torf--vazhneyshcye sredstvo okul'turivaniya peschanykh pochv Poles'ya. Izvestiya Akad. Nauk BSSr, 1949, No. 5, S. 93-103

SO: Letopis' Zhurnal'nykh Statey, No. 49, 1949

FILE NO.

I-V

USSR

Peat ash as a lime fertilizer. I. V. Filipenko and N. M. Latushkina. *Vestn. Akad. Nauk Kazakh. S.S.R.* 1954, No. 2, 33-7.—Peat ash, remaining after peat has been burned as fuel, contains 22.0–70.6% $CaCO_3$ and 2.6–5.1% $MgCO_3$. The ash is comparable to the dolomite liming fertilizer and to the lime tuff. The total amt. of bases in the ash is 8–11% higher than the sum of $CaCO_3$ and $MgCO_3$. Liming of meadows with the pulverized peat ash is as effective as the liming with other liming fertilizers. B. W.

Changes of the degree of decomposition of the organic material in the peat-bog soils and the amounts of the ash constituents depending on the time of the agricultural use of such soils. I. V. Filipenka. *Vestsi Akad. Navuk Belarus. S.S.R.* 1954, No. 3, 39–48. Information is given on the degree of decompn. of the org. material in 21 samples of a peat-bog soil and the chem. compn. (ash, total N, P_2O_5, K_2O, CaO, and $Fe_2O_3 + Al_2O_3$) of the peat before the soil drainage (1910) and after 43 years (1953) of grass cultivation on the soil. Reclamation of peat-bog soils creates favorable conditions for humus formation. During the 43-year period the amt. of the org. material decompd. increased from 10–20 to 35–60%, both in the soil (0–20 cm.) and in the subsoil horizons (20–40 cm.), provided the underground water during the vegetative period was below 90–100 cm.; with the underground water 40–45 cm. decompn. took place only in the upper 0–20 cm. soil horizon. In all instances the ash content of the peat increased, in the soil horizon 8.0–20.0%; this increase accounts mainly for the accumulation of CaO, 31–82 and 30–69% in both horizons, resp. The amts. of SiO_2 and other ash constituents, except those for CaO, Fe_2O_3, and Al_2O_3, decreased 28.5–50.3% (soil) and 11.0–74.0% (subsoil) as a result of the grass harvesting. Fe_2O_3 and Al_2O_3 increased, particularly in the soil horizon. In the soil horizons being cultivated the amt. of P_2O_5 increased 4 times, in those not being cultivated only 2 times; the amt. of P_2O_5 decreased with increasing depth of the soil. Total N increased 3–64% in the soil horizon but only 2.5–25% in the subsoil. The higher the level of underground water the more total N is accumulated in peat soils. B. Wierbicki

FILIPPENKO, Ivan Trofimovich; NESTEROV, Petr Grigor'yevich; SHOSTAK, A., kand. tekhn. nauk, retsenzent; AFONINA, G.P., red.

[Basic problems of the economics of iron-ore mining and treatment in the Krivoy Rog Basin] Osnovnye voprosy ekonomiki dobychi i pererabotki zheleznykh rud Krivbassa. Kiev, Tekhnika, 1965. 206 p. (MIRA 19:1)

PEREPECHKIN, L.P.; FILIPPENKO, K.A.; PETROV, Ye.A.

Prospects for the development of the production of acetate fibers, and their importance. Khim.volok. no.1:64-65 '63. (MIRA 16:2)

1. Nauchno-issledovatel'skiy institut sinteticheskikh smol, g. Vladimir.

(Textile fibers, Synthetic) (Cellulose acetates)

L 13274-65 EWT(m)
ACCESSION NR: AP4047798 S/0021/64/000/010/1311/1313

AUTHOR: Filippenko, L. G.; Shcherban', O. N. (Shcherban', A. N.)
(Academician AN UkrSSR)

TITLE: Utilization of heat generated by nuclear explosion for intensification of oil extraction

SOURCE: AN UkrRSR. Dopovidi, no. 10, 1964, 1311-1313

TOPIC TAGS: heat utilization feasibility

ABSTRACT: Referring to American technical literature the authors discuss the possibilities of using the heat of nuclear fission in oil extraction. They calculated the distribution of temperature in the soil, shortly following the explosion as well as a long time afterward. According to the authors, such utilization of heat is feasible. The mean temperature of the ground thus heated does not depend on the rate of the fission, but on the mechanical properties of the soil only. Orig. art. has: 7 formulas.

Card 1/2

L 13274-65
ACCESSION NR: AP4047798

ASSOCIATION: Instytut teploenergetyky* AN URSR (Institute of Heat and Power Engineering, AN UkrSSR)

SUBMITTED: 14Nov63 ENCL: 00 SUB CODE: NP, TD

NO REF SOV: 000 OTHER: 001

Card 2/2

FILIPPENKO, L. G., Cand of Phys-Math Sci — (diss) "Ionization and the Grabbing of Electrons by Multicharged Ions," Leningrad, 1959, 8 pp (Physico-Technical Institute, Acad Sci USSR) (KL, 5-60, 123)

FEDORENKO, N.V.; FLAX, I.P.; FILIPPENKO, L.G.; SOLOVYEV, E.S.

"Electron Capture by Multiply Charged Ions."

report presented at the 4th Intl Conference on Ionization Phenomena in Gases, Uppsala, 17-21 August 1959.

24.2120,24.6000

77329
SOV/57-30-1-8/18

AUTHORS: Fedorenko, N. V., Filippenko, L. G., Flaks, I. P.

TITLE: Scattering of Multiple Charged Ions With Simultaneous Electron Capture

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 1, pp 49-56 (USSR)

ABSTRACT: Introduction: Except for the Ar^{2+} Ar^{+}, scattering of multiple charged ions with simultaneous partial or total neutralization has not yet been studied, and the authors undertook to measure the scattering of particles obtained from primary Kr^{+}, Kr^{2+}, Kr^{3+}, and Ne^{2+} ions after their partial or total neutralization in neon or crypton. The authors investigated at the same time the small angle scattering of ions without change in charge which can differ from the elastic process by exciting or ionizing the atoms of the scatterer. (I) Methods of measurements: The apparatus consisted of a mass-monochromator producing a

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monoenergetic primary ion beam, a scattering chamber, and a movable magnetic analyzer. The diagram is shown in Fig. 1.

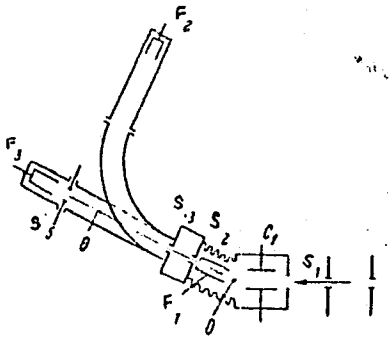

Fig. 1. Schematic drawing of the collision chamber and the analyzer. (O) center of rotation of the analyzer; (C_1) deflecting condenser; (F_1) collector of the primary beam; (F_2) collector of fast ions; (F_3) collector of fast neutral atoms; (S_1) entrance slit of the collision chamber (size 4 × 1 mm); (S_2) exit slit of the collision chamber (size 10 × 1 mm); (S_3) adjustable entrance slit of the receiver F_2; (S_5) entrance slit of the receiver F_3 (size 4 × 3.1 mm).

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Neutral particles reaching F_3, described in detail by Flaks and Solov'yev (ZhTF, XXVIII, 599, 1958) were registered by means of secondary emission. All measurements were made for incoming ion energy of 33 kev. Keeping the pressure between 0.5 and $1 \cdot 10^{-4}$ mm Hg the authors maintained single collision conditions. Incoming beam was of the order of 10^{-7} a, for singly ionized atoms and 10^{-8} to 10^{-9} a, for the doubly and triply ionized atoms. They measured differential cross section not smaller than $1 \cdot 10^{-16}$ $cm^2 \cdot sterad^{-1}$ for singly ionized atoms, $1 \cdot 10^{-15}$ $cm^2 \cdot sterad^{-1}$ for doubly, and $1 \cdot 10^{-14}$ $cm^2 \cdot sterad^{-1}$ for triply charged ions. Investigation in the 2.5 to 8° region showed that in this interval the effects are below the sensitivity of the apparatus. Probable error was between

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± 20 and 25%. (II) Results of measurements: Figure 3 and 8 represent typical results. Overall cross-section was defined as

$$G(\theta)=\sum_{f=0}^{i}\left(\frac{d\bar{\sigma}}{d\omega}\right)_{if}. \qquad (2)$$

The authors concluded that, (1) scattering with a total neutralization of primary ions favors smaller scattering angles while processes with partial neutralization occupy a wider region; this is true in the case of scattering on the same kind of gas or on a "foreign" element. (2) The larger the number of electrons captured during the full neutralization, the wider the scattering angle distribution of particles (see Fig. 8). (III) Evaluation of results: The authors estimated the value of the total cross-section using the equation

$$\bar{\sigma}_{if}=2\pi\int_{0}^{\theta_{max}}\left(\frac{d\bar{\sigma}}{d\omega}\right)_{if}\sin\theta d\theta \qquad (3)$$

Card 4/10 where θ_{max} fixed the angle beyond which the effects

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Fig. 3. Scattering of Kr^{2+} ions in Kr. (1) scattering without change or charge; (2) transition $Kr^{2+} \rightarrow Kr^{0}$; (3) transition $Kr^{2+} \rightarrow Kr^{+}$; (4) overall cross section $G(\theta)$.

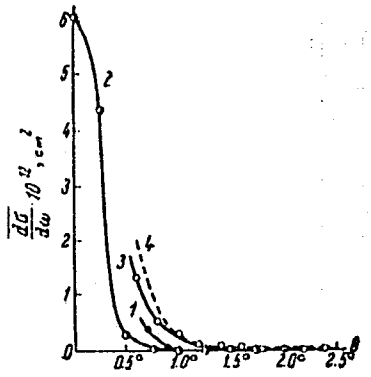

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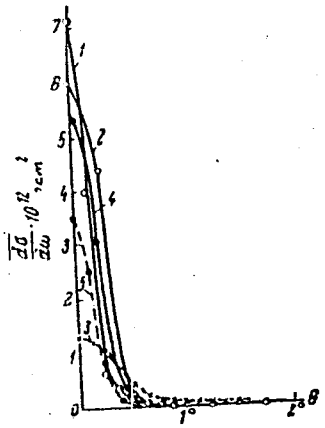
Fig. 8. Scattering with full neutralization of primary ions. (1) $Kr^{+} \rightarrow Kr^{0}$ in K (ordinate five times reduced); (2) $Kr^{2+} \rightarrow Kr^{0}$ in Kr; (3) $Kr^{3+} \rightarrow Kr^{0}$ in Kr; (4) $Ne^{2+} \rightarrow Ne^{0}$ in Kr; (5) $Ne^{2+} \rightarrow Ne^{0}$ in Ne.



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were below the sensitivity of the apparatus. Compared with results obtained by Flaks and others, who measured the cross sections directly, the discrepancy was never greater than 45%, which was within the limit of errors of both sets of measurements. To estimate the distance of approach, the authors used the classical representation of trajectories, justified in view of the small incident energies, and computed the sighting parameter $\bar{\rho}(\theta_0)$

$$\rho(\theta_0) = \sqrt{2\int_{\theta_0}^{\theta_{max}} \left[\sum_f \left(\frac{d\bar{\sigma}}{d\omega}\right)_{if}\right] \sin\theta d\theta} = \sqrt{2\int_{\theta_0}^{\theta_{max}} G(\theta)\sin\theta d\theta}. \quad (6)$$

Table 2 contains computed values of $\bar{\rho}(\theta_0)$ along with the values of θ_0 for which the sighting parameter is practically equal to the smallest internuclear distance r_0 of the two colliding particles.

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Table 2.

Pair	θ_0	$\rho(\theta_0)$, Å	$r_i + r_a$, Å
1	2	3	4
Kr^+ in Kr	1.5°	1	8
Kr^{2+} in Kr	0.7	1.5	7.5
Kr^{2+} in Ne	1.1	2.5	5.2
Ne^{2+} in Ne	0.9	7	3.5
Ne^{2+} in Kr	0.9	2	5.7
Kr^{3+} in Kr	0.75	2.3	6

The fourth row in Table 2 was computed using values or formulas from the book by Gambosh (Statistical Theory of Atom and Its Application, IL., M., 1951). Whenever $\overline{\rho}(\theta_0)$ came out larger than $r_i + r_a$, the authors deduced that Eq. (6) in that case is not applicable. The differences in the width of the angular distribution in cases of partial and total neutralization of incoming ions the authors tried to explain in the following manner: At an approach, the potential function of the ion and atom

looks like V(r) curve 1 in Fig. 9.

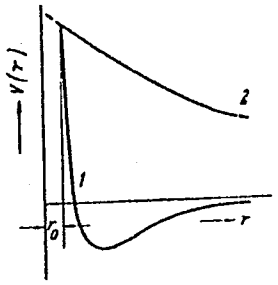

Fig. 9.

If there is no change in ionization or if there is a total neutralization, the V(r) curve remains the same. In the case of a partial neutralization, however, the interaction after collision is given by the Coulomb curve 2. Professors V. M. Dukel'skiy and D. M. Kaminker discussed the results, and A. M. Shchenkov helped in the adjustment of the experimental devices. There are 9 figures; 2 tables; and 13 references, 10 Soviet, 3 U.S. The U.S. references

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AUTHOR: Filippenko, L. G.

TITLE: Analysis of Systematic Error During Small Angle Scattering Investigations

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 1, pp 56-62 (USSR)

ABSTRACT: (1) Differential scattering cross sections are calculated from the angular distributions of scattered particles, i.e., from the values $N(\theta)$ of the particle flow in a particular direction. The finite resolving power of an apparatus always introduces a systematic error which cannot be reduced indefinitely, since the resolving power of an instrument is inversely proportional to its sensitivity. This is especially bad when one works with low incident beam intensity and also when one measures small angle scattering where the resolving power of the collimator is particularly poor and the relative error consequently high. The author felt, therefore, that it was absolutely necessary to take

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into account the errors of the apparatus when computing cross sections, and developed a method to that end. He also developed a way for estimating errors due to angular divergences in the incoming beam. (2) Theoretically the differential cross section is obtained from

$$\frac{d\sigma}{d\omega} = \frac{1}{ndxd\omega} \frac{dN(\psi, \theta)}{N(x)}, \qquad (1)$$

where N(x) is flow of the incident beam to be scattered at point x (the OX axis is oriented along the beam direction); $dN(\psi, \theta)$ is flow of particles scattered from region dx into the angle ψ (vertical plane) and θ (horizontal plane) with respect to the incoming beam; n is concentration of gas molecules along the beam axis; $d\omega = \sin\theta d\theta d\psi$ is infinitesimal solid angle inside which the flow $dN(\psi, \theta)$ is propagating. In practice, the pertinent equation is

$\omega(x_1) = \omega(x_2)$, because the integrands $dN(\psi, \theta)\Big|_{x_1}$ and $dN(\psi, \theta)\Big|_{x_2}$ are in general different. To take this into account and reduce the possible errors in (3) with respect to (1), the author proposed to substitute the integral in the denominator of (3) by

$$S(\theta) \simeq \sum_{k=1}^{n} \varphi_k \int_{\delta_k x} \omega(x)\, dx, \qquad (4a)$$

where one may take for the "weight" $\varphi_k(x)$ of a particular $\omega(x)$ in $\delta_k x$ (the k-th interval of x), the relation

$$\varphi_k = \frac{N(\theta = \theta_k)}{[N(\theta_k)]_{max}},$$

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$$\frac{d\bar{\sigma}}{d\omega} = \frac{1}{n} \cdot \frac{1}{\int_{\Delta x(\theta)} \omega dx} \cdot \frac{N(\theta)}{N_0}, \quad (3)$$

with

$$N(\theta) = \int_{\Delta x(\theta)} \nu(\omega, x) dx, \quad (2)$$

$$\nu(\omega, x) = \int_{\omega(x)} dN(\psi, \theta). \quad (2a)$$

where $\omega(x)$ is a finite "collecting angle"; $\Delta x(\theta)$ is the final scattering distance of the incoming beam N_0. Looking at Fig. 1, one notes that $\nu(\omega, x_1)$ is, in general, different from $\nu(\omega, x_2)$ even when

where θ_k is angle through which a particle originating at $\delta_k x$ has to be deflected to pass through the collimator slit; $N(\theta)$ is the experimental angular distribution; $[N(\theta_k)]_{max}$ is the largest of the values of $N(\theta)$ for the various corresponding $\theta = \theta_k$ occurring for a given θ. Using completely analogous reasoning, the author concluded that $N(\theta)$ and $d\bar{\sigma}/d$ should be related to the effective angle

$$\bar{\theta} \simeq \sum_{k=1}^{m} \psi_k \theta_k, \qquad (5)$$

instead of to angle θ. The "weight" ψ_k of the corresponding angle θ_k is given by

$$\psi_k = \frac{\delta_k N(\theta)}{N(\theta)}.$$